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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,171	01/14/2004	Jimmie Earl DeWitt JR.	AUS920030551US1	3544
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IBM CORP (YA) C/O YEE & ASSOCIATES PC P.O. BOX 802333 DALLAS, TX 75380			EXAMINER FRANCIS, MARK P	
			ART UNIT	PAPER NUMBER
			2193	
			MAIL DATE	DELIVERY MODE
			08/24/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/757,171

Applicant(s)

DEWITT ET AL.

Examiner

Mark P. Francis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 01/14/04; 05/30/06; 10/3/06; 3/30/07; 6/27/07
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This action is responsive to the application filed on January 14, 2004.
2. Claims 1-28 have been examined.

***Oath/Declaration***

3. The Office acknowledges receipt of a properly signed oath/declaration filed January 14, 2004.

***Claim Objections***

4. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claim 11 has been renumbered to claim 10.

Applicant did not include claim 10 in the original numbering, therefore there are actually 27 claims defined instead of 28.

Applicant is required to correct the claim numbering in response to this office action.

5. Claims 1, 10, and 19 are objected to because of the following informalities:  
Applicant misspelled the word automatically inside the preamble of each of the independent claims.

Appropriate correction is required.

**Claim Rejections - 35 USC § 101**

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 10-27 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

With respect to claim 10, this claim recites a data processing system for automatically patching computer program that comprises executing means, determining means, and returning means all of which can be implemented using software means only without the requirement of any type of hardware or platform to execute on. Therefore, the claim is rejected under 35 U.S.C. 101 as being Non-Statutory.

As a suggestion, Applicant could add "having processor" to the preamble of claim

11 to overcome this rejection.

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Regarding claim 19, this claim states, "...produced in a computer readable medium..." inside the preamble renders the claim Non-Statutory. Inside the specification, the Applicant defines the medium to include transmission type media such as carrier waves and signal bearing media which is considered to be Non-Statutory.

Thus, the claim is rejected under 35 U.S.C. 101.

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As a suggestion, Applicant could add the word "Storage" after the word "readable" inside the preamble of claim 19 to overcome this rejection.

The rejection of the base claims are incorporated into their dependent claims.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-3, 10-12, and 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated Hunter. (U.S. Pat 5,920,721)

With respect to claims 1,10, and 19, Hunter discloses a data processing system(Col 3:10-20, "...computer programs are prepared and loaded into a target computer...") for automatically patching computer program code,(Col 2:31-45, "...a loader program can patch in the better-suited code sequence...") the data processing system comprising: executing means for executing a computer program instruction, wherein the computer program instruction is located at the start of a block of code of an execution sequence;

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determining means for determining if metadata is associated with the computer program instruction; (Col 2:50-60, "...additional information in the executable program including an address specifying a program location...")

if metadata is found, redirecting means for redirecting execution to patch instructions indicated by the metadata; (Col 2:55-60, "...a value indicating in which run-time environment the execution of one of the code sequences is better-suited...")

executing means for executing the patch instructions;(Col 5:35-45, "...The resulting modified program performs the same assignment operation...")

returning means for returning to an instruction of the execution sequence in the computer program. (Col 5:35-45, "...straight through to the return at location...")

#### Dependent claims

With respect to claims 2,11 and 20, the rejection of claims 1,10 and 19 are incorporated respectively and further, Hunter discloses that the patch instructions are created during execution of the computer program. Col 5:35-45, "...the loader modifies the executable program...executed on a Version 2 Alpha...")

With respect to claims 3,12 and 21, the rejection of claims 1,10 and 19 are incorporated respectively and further, Hunter discloses that the patch instructions are created by copying instructions from the block of code to a new memory location; (Col 4:45-56, "...to store byte b thus placed in to memory at the address of byte a...")

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modifying the order of the instructions of the block of code;(Col 5:1-10, "...the single byte a in memory has been replaced by the byte b...")

and populating the metadata with pointer to the patch instructions. (Col 2:55-60, "...an address specifying a program location in the executable program...")

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 4-9,13-18, and 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter (U.S. Pat 5,920,721) in view of Aoshima.(U.S. Pat 5,339,426)

With respect to claim 4,13, and 22, the rejection of claims 1,10, and 19 are incorporated respectively and further,

Hunter does not disclose that the metadata is in a form of a memory word..

Aoshima discloses that the metadata is in a form of a memory word(Col 20:25-35, "...status word memory location...") in an analogous system for the purpose of providing a resume processing function which restores data indicative of the operating system

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operating conditions after an existing resume processing routine has been executed.(Aoshima:Col 2:44-47)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to disclose metadata in a form of a memory word.

The modification would have been obvious because one of ordinary skill in the art would have been motivated to provide a resume processing function which restores data indicative of the operating system operating conditions after an existing resume processing routine has been executed.(Aoshima:Col 2:44-47)

With respect to claim 5,14, and 23, the rejection of claims 1,10, and 19 are incorporated respectively and further,

Hunter does not disclose that the metadata includes a pointer to the patch instructions.

Aoshima discloses that metadata includes a pointer to the patch instructions. (Col 15:29-35, "...the virtual pointer to the real mode vector table...") in an analogous system for the purpose of providing a resume processing function which restores data indicative of the operating system operating conditions after an existing resume processing routine has been executed.(Aoshima:Col 2:44-47)



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Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to disclose metadata including a pointer to the patch instructions.

The modification would have been obvious because one of ordinary skill in the art would have been motivated to provide a resume processing function which restores data indicative of the operating system operating conditions after an existing resume processing routine has been executed.(Aoshima:Col 2:44-47)

With respect to claim 6,15, and 24, the rejection of claims 5,14, and 23 are incorporated respectively and further,

Hunter does not disclose that the pointer to the patch instructions includes a starting address of the patch instructions in an allocated memory location.

Aoshima discloses that the pointer to the patch instructions includes a starting address of the patch instructions in an allocated memory location(Col 10:45-60, "...the address of the original protected mode...") in an analogous system for the purpose of providing a resume processing function which restores data indicative of the operating system operating conditions after an existing resume processing routine has been executed.(Aoshima:Col 2:44-47)

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to disclose a pointer to the patch instructions that includes a starting address of the patch instruction in allocated memory.

The modification would have been obvious because one of ordinary skill in the art would have been motivated to provide a resume processing function which restores data indicative of the operating system operating conditions after an existing resume processing routine has been executed.(Aoshima:Col 2:44-47)

With respect to claim 7,16, and 25, the rejection of claims 6,15, and 24 are incorporated respectively and further,

Hunter does not disclose that the starting address includes at least one of an absolute or offset address.

Aoshima discloses that the starting address includes at least one of an absolute or offset address (Col 15:24-35, "...offset address...") in an analogous system for the purpose of providing a resume processing function which restores data indicative of the operating system operating conditions after an existing resume processing routine has been executed.(Aoshima:Col 2:44-47)

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to disclose the starting address including an offset address.

The modification would have been obvious because one of ordinary skill in the art would have been motivated to provide a resume processing function which restores data indicative of the operating system operating conditions after an existing resume processing routine has been executed.(Aoshima:Col 2:44-47)

With respect to claim 8,17, and 26, the rejection of claims 1,16, and 25 are incorporated respectively and further,

Hunter does not disclose further comprising checking means for checking a new flag in a machine status register to determine whether code patching functionality is enabled.

Aoshima discloses checking means for checking a new flag in a machine status register to determine whether code patching functionality is enabled. (Col 20:15-30, "...offset checking the previously-saved flag indicating..." ) in an analogous system for the purpose of providing a resume processing function which restores data indicative of the operating system operating conditions after an existing resume processing routine has been executed.(Aoshima:Col 2:44-47)

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to check a new flag to determine if code patching is enabled.

The modification would have been obvious because one of ordinary skill in the art would have been motivated to provide a resume processing function which restores data indicative of the operating system operating conditions after an existing resume processing routine has been executed.(Aoshima:Col 2:44-47)

With respect to claim 9,18, and 27, the rejection of claims 1,10, and 19 are incorporated respectively and further,

Hunter does not disclose that the patch instructions include reorganized instructions, instrumented alternative instructions, and hooks to build an instruction trace.

Aoshima discloses that the patch instructions include reorganized instructions,(Col 10:35-45, "...a jump instruction...")instrumented alternative instructions, (Col 10:34-45, "...the five NOP instructions will be patched...")and hooks to build an instruction trace.(Col 15:29-40, "...hooking the real mode NMI vector...")

in an analogous system for the purpose of providing a resume processing function which restores data indicative of the operating system operating conditions after an existing resume processing routine has been executed.(Aoshima:Col 2:44-47)

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to check a new flag to determine if code patching is enabled.

The modification would have been obvious because one of ordinary skill in the art would have been motivated to provide a resume processing function which restores data indicative of the operating system operating conditions after an existing resume processing routine has been executed.(Aoshima:Col 2:44-47)

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark P. Francis whose telephone number is (571)272-7956. The examiner can normally be reached on Mon-Fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai T.An can be reached on (571)272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mark P. Francis

Patent Examiner

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